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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/069,182	05/22/2002	Takuo Sakai	0397-0441P	7643

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EXAMINER

WARE, DEBORAH K

ART UNIT	PAPER NUMBER
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1651

DATE MAILED: 04/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/069,182	<b>Applicant(s)</b> SAKAI, TAKUO	
	<b>Examiner</b> Deborah K. Ware	<b>Art Unit</b> 1651	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 13 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-11 is/are pending in the application.
- 4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1 and 3-11 are presented for reconsideration on the merits.

#### ***Priority***

Further, the foreign priority papers filed December 12, 2005, have been received.

#### ***Election/Restrictions***

Applicant's election with traverse of Group I (claims 1, 3, 4, 5, 6 and 7) in the reply filed on January 13, 2006, is acknowledged. The traversal is on the ground(s) that claims 1 and 10 have the same technical feature, to produce an antibacterial substance. This is not found persuasive because although both independent processes of each of claims 1 and 10 require production of an antibacterial substance, they do not require the same process steps for obtaining the substance of which make up a special technical feature that is different and separate; and further, may even produce two separate and distinct pectin substances, albeit having the same activity, because the substance is not identified per se in terms of its properties and characteristics, other than one which is a pectin substance which reads on pectin.

Note that in any one process more than one pectin or pectins may be obtained which vary more or less, according to the kind of materials used to obtain them. Also claims 1 and 10 do not share the same steps since the cutting and grinding is not a required step by claim 1 and only required by claim 10. Further the argument that Groups I and II are not properly restricted is noted, however, a food is a separate

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product than the substance itself. Also the product of Group I has not been determined to be novel.

The requirement is still deemed proper and is therefore made FINAL.

Claims 8-11 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention(s), there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on January 13, 2006.

#### ***Response to Amendment***

The amendments filed September 29, 2005 and supplemental amendment filed December 12, 2005, have been received and entered.

#### ***Response to Arguments***

Applicant's arguments filed September 29, 2005 and December 12, 2005 have been fully considered in light of the newly submitted amendments and english translated foreign priority document, and new art discovered and all previous rejections have been removed.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 3-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 1 recites "a pectin substance" at last line, however, the term lacks antecedent basis. Also it is uncertain how "a pectin substance" is different than "the antibacterial substance". Therefore, the metes and bounds of the claims can not be determined.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1 and 3-7 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over newly cited Sakai (US 4,835,262), note enclosed PTO-892 Form.

Claims are drawn to a process of producing antibacterial substance and product thereof. The substance is a pectin substance and is released from tissue of plant with an enzyme such as protopectinase.

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Sakai teaches process for producing pectin substance and product thereof. The substance is released from tissue of plant with an enzyme such as protopectinase. Note column 1, lines 9-11, lines 55-67, column 2, lines 1-10, lines 33-37, lines 62-63, column 3, lines 30-36, lines 52-53, lines 59-63, column 4, line 10, lines 17-22, lines 28 and 37 and lines 45-50, column 6, lines 27 and 29. Sakai teaches that propectinase is used to liberate a pectin substance and that and can be used as a medicine because it does not contain contaminating chemical substances. The pectin substance is obtained from plant tissue.

The claims are considered to be identical to the cited disclosure and are therefore, considered to be anticipated by Sakai. The antibacterial activity of the Sakai pectin substance is inherent since it is the identical substance obtained from the same kind of material, carrot plant tissue, which has been acted upon by a protopectinase. Any disintegration of the carrot plant tissue by protopectinase is inherent as well. The reference clearly teaches that carrot plant tissue is treated with protopectinase to obtain a pectin substance. The substance of Sakai and the claimed substance are not different because they are obtained from the same kind of material. The antibacterial properties are inherent to the pectin substance of newly cited Sakai because it is obtained from the same identical source. Also whether using protopectinase F, S, L, T, C or N the same mechanism of activity as disclosed by Sakai reference is inherent to any of these protopectinases as they all have the properties of liberating pectin from plant tissue. The enzymes are disclosed to be used at pH within the range of 2-10 and at a temperature within the range of 30 to 40 ° C.

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However, in the alternative that there is some difference between them (the prior art and claimed method and substance, that is), then the difference is considered to be so slight as to render the pectin substance and process of the instant claims *prima facie* obvious over the newly cited Sakai reference. Also any protopectinase would have at least been expected to provide successful results so long as the enzyme does not decompose the pectin because Sakai reference discloses that their pectin-liberating enzymes do not decompose the pectin.

Therefore, so long as the protopectinase is selected based upon this premise it would be expected to provide successful results. One of skill in the art would have expected the properties of the Sakai's pectin substance to possess antibacterial activity because it does not contain contaminating substances in it for which to diminish the polysaccharides ability to function as an antibiotic having antibacterial activity. Typically polysaccharides are well known in the art for their industrial use as medicines such as antibiotics which have antibacterial activity.

Therefore, the pectin substance disclosed by Sakai reference would have at least been expected to provide successful results as an antibacterial substance. Furthermore, as disclosed by Sakai reference the pectin substance is obtained from carrot plant tissue which is the identical tissue used in the claimed process. The identical enzyme, protopectinase, is employed as well to liberate the same pectin substance. The pectin substance is disclosed to have industrial use as a medicine and to not contain contaminants. The disclosure at least guides one of skill in the art to

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obtain a pectin substance as disclosed with the expectation of successful results for one which possesses antibacterial activity.

Furthermore, the bactericidal composition containing an antibacterial substance as set forth by Sakai would have been expected to possess the capability of inhibiting spores from mold and spore-forming bacteria because the pectin is clearly taught to be suitable for medicine; and also the pectin of Sakai reference is not decomposed so it therefore, would have been expected to possess inhibiting activity against contaminants such as mold and spore-forming bacterial (i.e. Bacillus).

In addition, Bacillus is used by Sakai reference as an alternative to propectinase for obtaining pectin substance and the microorganism is also a well known spore-forming bacteria, thus, the Sakai pectin substance is produced using a spore-forming bacteria and not decomposed by it but is produced in great yields.

Therefore, in the alternative that such inhibitory properties are not inherent to the pectin substance of Sakai, it is evident from the cited disclosure that an expected result would have been obtained for inhibiting spores due to the presence of the Sakai pectin substance obtained with Bacillus microorganism acting upon plant tissue. Otherwise spores would have been produced by Bacillus microorganism during the process of producing the pectin substance as disclosed by Sakai reference, and this would have provided pectin substance containing contaminants, however, Sakai reference teaches that their pectin substance does not contain contaminants.

The claims are at least *prima facie* obvious over the newly cited prior art.



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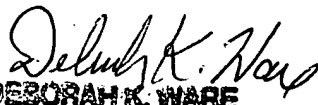
All claims fail to be patentably distinguishable over the state of the art discussed above and cited on the enclosed PTO-892. Therefore, the claims are properly rejected.

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deborah K. Ware whose telephone number is 571-272-0924. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on 571-272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**DEBORAH K. WARE**  
**PATENT EXAMINER**  
Deborah K. Ware  
April 13, 2006